

CLAIMS

What is claimed is:

1. A fastener configured to couple a component having a flat surface at a predetermined spacing from a carrier member comprising:
a base member having a supporting face, a fastening face, and a shank which is arranged on the supporting face and is configured to support the component, the fastening face being generally annular and having a surface area smaller than the supporting face.
2. A fastener according to Claim 1, wherein the supporting face and fastening face are rotationally symmetrical.
3. A fastener according to Claim 2, wherein the annular fastening face has an internal diameter and an external diameter, the external diameter being equal to the diameter of the supporting face.
4. A fastener according to Claim 1, wherein the fastening face is polygonal.
5. A fastener according to Claim 1 wherein the fastening face has a surface area less than 80%, of the supporting face.

6. A fastener according to Claim 5 wherein the fastening face is has a surface area less than 65% of the supporting face.
7. A fastener according to Claim 1 wherein the base member has a height of between 3 and 10 mm in the direction of an axis.
8. A fastener according to Claims 1, wherein the fastener is of modular construction.
9. A fastener according to Claim 8, wherein a means is provided for positioning the shank on the supporting face, and the shank is connected to the base member preferably by a jointing technique.
10. A fastener according to Claim 1 wherein the shank has an abutting face which is smaller than 50% of the supporting face.
11. A fastener according to any of Claims 1 wherein the shank has an abutting face which is smaller than 40% of the supporting face.
12. A fastener according Claim 1, characterized in that the shank has a means for fixing a flat component.

13. A fastener according to Claim 11, characterized in that the shank has at least one raised portion extending at least partly radially outwards, the at least one raised portion preferably being shaped peripherally as a latching step or screw thread.

14. A method of producing a fastener having a base member with a supporting face, a fastening face, and a shank which is arranged on the supporting face and is configured to support the component, the fastening face being generally annular and having a surface area smaller than the supporting face, wherein the base member is first produced by a primary shaping process and the shank is then connected to the supporting face of the base member by a jointing technique.

15. A method of producing a fastener having a base member with a supporting face, a fastening face, and a shank which is arranged on the supporting face and is configured to support the component, the fastening face being generally annular and having a surface area smaller than the supporting face, wherein the entire fastener is formed by a primary shaping process.

16. A stud to structure construction comprising:

a weldable fastener having a base member having a supporting face, a fastening face, and a shank which is arranged on the supporting face and is configured to support the component, the fastening face being generally annular and having a surface area smaller than the supporting face; and

an annular weldment disposed between and coupling the weldable fastener to the structure.

17. The stud to structure construction according to Claim 16 wherein the shank is threaded.

18. The stud to structure construction according to Claim 17 wherein the base member comprises a web portion.

19. The stud to structure construction according to Claim 16 wherein the fastening face defines an aperture having a first internal diameter which is configured so the fastening face has an area which is less than about 65% of the area of the supporting face.

20. A weld stud configured to couple a component having a flat surface at a predetermined spacing from a carrier member comprising:

a longitudinally elongated shank;

a laterally enlarged head extending from an end of the shank; and

a substantially annular section longitudinally extending from the

head opposite the shank; and

wherein a fastening face of the annular section is substantially flat along a lateral plane substantially parallel to a lateral plane of the head, prior to welding and wherein the fastening face defines an aperture having a first internal diameter being configured so the fastening face has an area which is less than about 65% of the area of the supporting face.

21. A weld stud according to Claim 20 wherein the shank has an abutting face which is smaller than 50% of the supporting face.

22. A weld stud according to Claim 20 wherein the shank has an abutting face which is smaller than 40% of the supporting face.

23. A weld stud according to Claim 20 wherein the shank is arranged coaxially with the supporting face and wherein the available supporting face is large enough to allow a stable arrangement of the flat component at a spacing from the carrier member.

24. The weld stud according to Claim 20 wherein said head has an exterior wall having a first exterior radius and said annular weldment area has a second exterior radius equal to the first exterior radius.

25. The weld stud according to Claim 20 wherein the elongated shank is a threaded shank.

26. An automotive vehicle component construction comprising:
a component having generally planar coupling surface;
a carrier panel; and
a weldable fastener having a base member having a supporting face, a fastening face, and a shank which is arranged on the supporting face and is configured to support the coupling surface component, the fastening face being generally annular and having a surface area smaller than the supporting face; and
an annular weldment disposed between and coupling the weldable fastener to the structure, wherein the ring stud is coupled to the carrier panel by the annular weldment area.

27. The automotive vehicle component construction according to claim 26 wherein the shank has an abutting face which is smaller than 50% of the supporting face.

28. The automotive vehicle component construction according to Claim 26 wherein the shank has an abutting face which is smaller than 40% of the supporting face.

29. The automotive vehicle component construction according to Claim 26 wherein the shank is arranged coaxially with the supporting face and wherein the available supporting face is large enough to allow a stable arrangement of the flat component at a spacing from the carrier member.

30. A method of attaching a component at a predetermined distance to an automotive vehicle panel, the method comprising:

(a) locating a fastener having a base member with a supporting face, a fastening face, and a shank which is arranged on the supporting face and is configured to support the component, the fastening face being generally annular and having a surface area smaller than the supporting face, adjacent the vehicle panel;

(b) creating an electrical arc between the fastener and the vehicle panel; and

(c) coupling the component to the fastener at the fastening face.